UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/014,664	12/14/2001	Frederick Johannes Bruwer	P.19385	4865

7590   12/08/2005

JONES, TULLAR & COOPER, P.C.
P. O. Box 2266 Eads Statiion
Arlington, VA 22202

EXAMINER
MOORTHY, ARAVIND K

ART UNIT	PAPER NUMBER
2131	

DATE MAILED: 12/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/014,664	BRUWER, FREDERICK JOHANNES
	Examiner	Art Unit	
	Aravind K. Moorthy	2131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>*26 September 2005*</u>.

2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>*25-37 and 39-63*</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>*25-37 and 39-63*</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>*14 December 2001*</u> is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☒ All b) ☐ Some * c) ☐ None of:

      1. ☒ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1. This is in response to the amendment filed on 26 September 2005.

2. Claims 25-37 and 39-63 are pending in the application.

3. Claims 25-37 and 39-63 have been rejected.

4. Claims 1-24 and 38 have been cancelled.

5. Claim 39 has been objected to.

Response to Arguments

6. Applicant's arguments with respect to claims 25-37 and 39-63 have been considered but are

moot in view of the new ground(s) of rejection.

Claim Objections

7. Claim 39 is objected to because of the following informalities: improper dependency. Claim

39 depends upon claim 38. Claim 38 is a cancelled claim. A claim cannot depend upon a

cancelled claim. For the sake examination, the examiner assumes that claim 39 depends upon

claim 25. Appropriate correction is required.

8. Claim 51 is objected to because of the following informalities: punctuation. There is no

period at the end of the sentence. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an

international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9.   **Claims 25-30, 34-37, 39-51 and 58-60 are rejected under 35 U.S.C. 102(b) as being anticipated by Hartman, Jr. U.S. Patent No. 5,500,897 (hereinafter Hartman).**

As to claim 25, Hartman discloses a method of securely transferring data from an encoder to a decoder, the encoder including an encoder timer and the decoder including a decoder timer, the method including the steps of:

(a) during a learning process receiving a value of the encoder timer at the decoder timer and generating a timer relationship value which is dependent at least on a difference between the value of the encoder timer and the value of the decoder timer [column 6, lines 22-49];

(b) storing the timer relationship value in the decoder [column 6, lines 22-49];

(c) at the encoder encrypting a data word which at least in part is based on timer information generated by the encoder timer to form a transmission word [column 8, lines 50-65];

(d) transmitting the transmission word to the decoder [column 6, lines 22-49];

(e) at the decoder decrypting the transmission word [column 6, lines 22-49]; and

(f) validating the transmission word by comparing the encoder timer value

and the decoder timer value and their relationship with the stored timer

relationship value [column 6, lines 22-49].

As to claim 26, Hartman discloses that the timer relationship value in the decoder is

updated upon receipt of a valid transmission word to remove any discrepancies in the

relationship between the encoder timer, decoder timer and the timer relationship value, without

affecting the decoder timer [column 6, lines 22-49].

As to claim 27, Hartman discloses that the updating of the timer relationship value is only

done when necessary [column 7, lines 59-65].

As to claim 28, Hartman discloses that the data word additionally includes at least one of

the following: identity information pertaining to the encoder: command information; utility

information; cold boot counter information; fixed code information; encoder power supply

information and user derived information [column 10, lines 29-53].

As to claim 29, Hartman discloses that the user derived information is variable via one or

more inputs to the encoder and is not known to a manufacturer of the encoder [column 5, lines

19-28].

As to claim 30, Hartman discloses that the transmission word includes the encrypted data

word and at least one of the following: a cold boot counter value; command information; and

identity information pertaining to the encoder [column 10, lines 29-53].

As to claim 34, Hartman discloses the step of forming a plurality of transmission words.

Hartman discloses each transmission word being different from the other transmission words and

being based at least on respective encoder high speed timer information, in response to a single

activation of the encoder [column 8, lines 50-65].

As to claim 35, Hartman discloses the step of forming only a single transmission word to

be transmitted at least once in response to a single activation of the encoder [column 8, lines 50-

65].

As to claim 36, Hartman discloses the steps, during a learn mode, of storing learning

information at the decoder which is transferred from the encoder, and deriving a key from the

stored information [column 8, lines 50-65].

As to claim 37, Hartman discloses that the learning information is stored in a

first-in-first-out structure [column 8, lines 50-65].

As to claim 39, Hartman discloses that multiple encoders are used with a single decoder

comprising a single timer and multiple timer relationship values and wherein the various timer

relationship values are determined, one for each encoder during its respective learning process

[column 8, lines 11-49].

As to claim 40, Hartman discloses the step of ensuring that the encoder timer at its

slowest variance is faster than the decoder timer at its fastest variance [column 8, lines 50-65].

As to claim 41, Hartman discloses that if the decoder timer lies within a predetermined

window when a valid transmission word is received, the decoder timer is re-synchronised with

the encoder timer by automatically adjusting the timer relationship value to remove any

discrepancies in the relationship between the timers and the timer relationship value [column 8,

lines 11-49].

As to claim 42, Hartman discloses that the re-synchronization is effected by a bi-directional transfer of data between the encoder and decoder [column 8, lines 11-49].

As to claim 43, Hartman discloses that the timer relationship value or a window is adjusted in size to compensate for drift between the encoder timer and the decoder timer, before validation occurs, such adjustment being based at least on the time period elapsed since the last adjustment of the timer relationship value [column 10, lines 29-53].

As to claim 44, Hartman discloses that the timer relationship value or a window its adjusted in size to compensate for drift between the encoder timer and the decoder timer, such adjustment being based at least on information about the drift between the encoder timer and the decoder timer determined by analysing at least two successive valid transmissions received with a period of time elapsed between them and the adjustment being performed before carrying out step (f) on a currently received transmission word [column 10, lines 29-53].

As to claim 45, Hartman discloses that a window size is assigned to the decoder and the encoder timer is operated to ensure that the encoder timer information does not fall outside the window for a valid transmission of a transmission word in normal operational circumstances [column 10, lines 29-53].

As to claim 46, Hartman discloses that the timer relationship value is allowed a window when validation of the transmission word occurs and the timer relationship value is adjusted based on knowledge of drift between the encoder timer, the decoder timer and the time period elapsed since a previous valid transmission of a transmission word [column 10, lines 29-53].

As to claim 47, Hartman discloses that the window size is dynamically adjusted and such adjustment is based on the time period elapsed since the previous adjustment of the timer relationship value [column 10, lines 29-53].

As to claim 48, Hartman discloses that the window size has a minimum value [column 10, lines 29-53].

As to claim 49, Hartman discloses that the window size has a maximum value [column 10, lines 29-53].

As to claim 50, Hartman discloses that the transmission data word also includes a timer value that changes fast so that each transmission word in a sequence of transmission words which are transmitted based on a single continuous activation of the encoder, differs from the other transmission words [column 6, lines 22-49].

As to claim 51, Hartman discloses that a higher security re-synchronization of the encoder and decoder timers is achieved at least by using the decoder to generate control signals that are used to, directly or indirectly, control the activation of the encoder [column 6, lines 22-49].

As to claim 58, Hartman discloses a transmitter which includes an encoder timer and an encryption unit for encrypting data which at least in part is based on timer information from the encoder timer thereby to form the transmission word, and wherein the encoder timer is permitted to run only for a limited period after each activation of the transmitter [column 5, lines 29-53].

As to claim 59, Hartman discloses a transmitter which includes an encoder timer and an encryption unit for encrypting data which at least in part is based on timer information from the encoder timer thereby to form the transmission word and wherein, when the encoder timer runs

beyond a predetermined limit, the transmitter will upon a single activation transmit more than one transmission value equivalent to the transmitter being activated twice [column 5, lines 29-53].

As to claim 60, Hartman discloses a decoder which includes a timer, an input to receive the transmission word, a decryption unit to decrypt the transmission word and obtain the transmitted timer information, memory to store the timer relationship value and a comparison unit to compare the transmitted timer information to time information generated by the decoder timer and to the stored timer relationship value, and means, responsive to the comparison unit, to activate an output if certain criteria are met in the comparison [column 5, lines 29-53].

10. Claims 52-57 are rejected under 35 U.S.C. 102(e) as being anticipated by Scott et al U.S. Patent No. 6,484,260 B1.

As to claim 52, Scott et al discloses an apparatus for transferring data which includes an encoder and a decoder and wherein the encoder includes a timer and an encryption unit for encrypting data which at least in part is based on timer information from the encoder timer [column 12, lines 29-59], thereby to form a transmission word, and the decoder includes a decoder timer [column 12, lines 29-59], a receiver unit for receiving the encrypted transmission word, a decryption unit for decrypting the received transmission word to extract, at least, the timer information from the encoder, and a comparator unit for comparing decrypted encoder timer information to timer information from the decoder timer using a timer relationship value [column 12, lines 29-59], to determine the validity of the transmission word, the timer relationship value being established during a learning process of the encoder and decoder and being dependent at least on a difference between a value of the encoder timer received by the

decoder from the encoder during the learning process and a value of the decoder timer [column 12, lines 29-59].

As to claim 53, Scott et al discloses that the apparatus includes a unit for adjusting the timer relationship value when a valid transmission word is received to remove at least one of:

(a) any drift that has occurred [column 12, lines 29-59]; and

(b) any other accumulating discrepancy in the relationship between the encoder timer, decoder timer and the timer relationship value [column 12, lines 29-59].

As to claim 54, Scott et al discloses that the timer relationship value is adjusted before checking the validity of a received transmission word, such adjustment being based at least on a known drift between the encoder timer and the decoder timer as well as the time elapsed since a previous adjustment of the timer relationship value [column 12, lines 29-59].

As to claim 55, Scott et al discloses that the decoder is assigned a window size which determines acceptable drift between the encoder timer and decoder timer for a valid transmission [column 12, lines 29-59].

As to claim 56, Scott et al discloses that the window size is adjusted before checking the validity of a received transmission word, the adjustment being based at least on the time period elapsed since the reception of a previously received valid transmission word [column 10 line 58 to column 11 line 33].

As to claim 57, Scott et al discloses that a re-synchronisation of the encoder and decoder can be achieved by the decoder providing control signals for the encoder inputs [column 10 line 58 to column 11 line 33].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hartman, Jr.

U.S. Patent No. 5,500,897 as applied to claim 25 above, and further in view of Belt et al U.S.

Patent No. 5,446,904.

As to claim 31, Hartman does not teach that the cold boot counter value, when included

in the transmission word, is transmitted in the clear.

Belt et al teaches a cold boot counter value that is transmitted in the clear [column 38,

lines 52-64].

Therefore, it would have been obvious to a person having ordinary skill in the art at the

time the invention was made to have modified Hartman so that when a cold boot counter value is

included in the transmission word that it would have been transmitted in the clear.

It would have been obvious to a person having ordinary skill in the art at the time the

invention was made to have modified Hartman by the teaching of Asprey because it insures that

the time information on the system remains accurate [column 3 line 66 to column 4 line 4].

12. Claims 32, 33 and 61-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hartman, Jr. U.S. Patent No. 5,500,897 as applied to claim 25 above, and further in view of Rysko et al U.S. Patent No. 5,155,729.

As to claims 32, 33 and 61-63, Hartman does not teach the step of keeping the encoder and decoder in synchronism using a cold boot counter which is changed each time the encoder is powered up or comes out of reset. Hartman does not teach including a count value of the cold boot counter in the transmission word. Hartman does not teach that the cold boot counter value, or part thereof, when included in the transmission word, is transmitted in the clear.

Rysko et al teaches a cold boot counter that is changed each time a system is powered up or comes out of reset. Rysko et al teaches including a count value of the cold boot counter in the transmission word. Rysko et al teaches that the cold boot counter value would have been transmitted with the transmission word in the clear. [column 6, lines 29-64].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Hartman so that the encoder and decoder would have been in synchronism using a cold boot counter which would have changed each the time the encoder was powered up or came out of reset. The cold boot counter value would have been included in the transmission word and transmitted in the clear.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Hartman by the teaching of Rysko et al because it prevents for endless switchover attempts, i.e. "ping-pong" between redundant processors [column 2, lines 28-41].

Conclusion

13.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aravind K. Moorthy whose telephone number is 571-272-3793. The examiner can normally be reached on Monday-Friday, 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz R. Sheikh can be reached on 571-272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Aravind K Moorthy
December 5, 2005

AYAZ SHEIKH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100